

Over the past 15 years, hospital chart reviews, as used by Ross Baker and associates in the Canadian Adverse Events Study,<sup>1</sup> have been accepted as a barometer of health care safety, yet they tell us vanishingly little about the situation in which the vast majority of patient contacts occur: the interface between patients and primary care practitioners or emergency physicians. Lack of treatment of hypertension or hyperlipidemia, insufficient emphasis on preventive medicine, and overprescribing or underprescribing of medication are a few examples of front-line errors that will not be captured in a chart review.

A neglected but extremely common type of error results from cognitive failure. Such errors underlie delayed or missed diagnosis, the commonest source of litigation for physicians. Quintessentially within the domain of the physician, diagnosis involves thinking, a private and invisible process. Furthermore, medical decision-making has been ill-served by traditional, quantitative models. No paradigm of clinical decision-making adequately describes real-world "flesh and blood" decisions, which can present significant hazards to patients. These cognitive failures will also be seriously underestimated in hospital chart reviews.

Baker and associates<sup>1</sup> suggest that a trend toward more AEs in teaching hospitals may have been due in part to lower quality of care. In this respect, 2 major issues need fleshing out. First, care in teaching hospitals is often given by trainees suffering from fatigue, sleep deprivation and an accumulated sleep debt,<sup>2</sup> all of which compromise performance<sup>3</sup> and thereby contribute to error. It is still not uncommon to find Canadian residents in some disciplines working more than 100 hours/week, a workload that would be considered unsafe and unacceptable in any other industry. Second, these trainees are often inexperienced junior staff members, charged with providing clinical services that may lie beyond their level of expertise.

A final point: surgeons might be forgiven for feeling singled out through

the inevitable comparisons made in this type of study. Surgery is a much more tangible business than other realms of medicine, and surgical errors of omission and especially commission are usually much more highly visible than those in other disciplines.<sup>4</sup> Comparing medicine and surgery serves little purpose other than to draw attention to this tangibility and visibility.

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#### References

1. Baker GR, Norton PG, Flintoft V, Blais R, Brown A, Cox J, et al. The Canadian Adverse Events Study: the incidence of adverse events among hospital patients in Canada. *CMAJ* 2004; 170(11):1678-86.
2. Gaba DM, Howard SK. Fatigue among clinicians and the safety of patients. *N Engl J Med* 2002;347:1249-55.
3. Bonnet MH. Sleep deprivation. In: Kryger M, Roth T, Dement WC, editors. *Principles and practice of sleep medicine*. Philadelphia: Saunders; 2000. p. 53-71.
4. Croskerry P. Cognitive forcing strategies in clinical decision making. *Ann Emerg Med* 2003;41: 110-20.

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In Table 1 of their recent article reporting results of the Canadian Adverse Events Study, Ross Baker and associates<sup>1</sup> show that AE rates were lower in the United States and higher in Canada, Britain, Australia and New Zealand.

However, such differences between countries may be due more to differences in the medical systems rather than differences in the quality of patient care. The United States has a very different medical environment, partly because of the highly litigious nature of US culture.<sup>2</sup> The fear of being sued may reduce the incidence of hindsight bias<sup>3</sup> in US studies, since physicians may order more tests than are strictly necessary, which makes it more difficult for researchers such as Baker and associates to second-guess their decisions.

In addition, people of lower socioeconomic status consume more medical

resources than wealthy people.<sup>4</sup> It may be that economically disadvantaged people with complex ailments cannot obtain care in the United States. Given that these people are at greater risk of an AE,<sup>5</sup> this difference might reduce the apparent rate of AEs in the United States simply because these people never receive care at all.

Such differences in medical cultures may not be well captured by these types of studies. Therefore, we should be cautious in comparing AE rates between the United States and Canada.

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#### References

1. Baker GR, Norton PG, Flintoft V, Blais R, Brown A, Cox J, et al. The Canadian Adverse Events Study: the incidence of adverse events among hospital patients in Canada. *CMAJ* 2004; 170(11):1678-86.
2. Abood S, Tehan T. Medical malpractice crisis. *Am J Nurs* 2003;103(5):29.
3. Hébert PC, Levin AV, Robertson G. Bioethics for clinicians: 23. Disclosure of medical error. *CMAJ* 2001;164(4):509-13.
4. Roos NP, Forget E, Walld R, MacWilliam L. Does universal comprehensive insurance encourage unnecessary use? Evidence from Manitoba says "no." *CMAJ* 2004;170(2):209-14.